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Moon Lake C.C.C. Camp F-37
Duchesne, Utah
Dec. 15, 1934.

S (ECW)
Insect Control
Ashley

MEMORANDUM FOR SUPERVISOR

After a rather thorough examination of the areas in Raspberry Draw and those tributary to Lake Fork River near the lower end of Moon Lake it seems evident that the infestations of the Douglas fir beetle (*D. pseudotsugae*) comprise only a part of a more important silvicultural problem.

Although the beetle infestations are quite widely spread throughout infested stands they are confined for the most part to weak broods working in dying bark in conjunction with several other species of secondary bark beetles and Buprestids. It is quite plain that the Douglas fir beetles have been endemic in all the stands examined in much the same proportions for the past several years and have only occasionally assumed the role of primary attackers either single or in groups of two to several trees.

Most of the infested trees have been dying slowly. The severe drouth conditions coupled with heavy infections of mistletoe (*R. douglasii*) have interfered seriously with the normal health of the trees on the infested areas so that they have become susceptible to the attacks of any insects which prefer the cortex or wood of trees which are not physiologically sound. Excepting a few instances the Douglas fir beetle attacks are confined to the upper boles of the affected trees whereas the lower boles and the bases generally exhibit only the work of Buprestid larvae. Thus the larvae of the Douglas fir beetles, which are usually not so numerous as other species will play only a minor part in ultimately bringing about the death of infested trees.

Because of the generally unhealthy condition of the infested stands the problem is regarded as silvicultural rather than one of purely insect control. It is suggested that effort be directed toward eliminating the crops on the ground which will obviously never be of economic value and providing for new crops of timber through proper silvicultural procedure.

It has been felt that the Douglas fir beetle would spread from the areas of infestation into adjacent, perhaps more valuable bodies of timber

and become primary in character. This is possible but not probable in view of the existing status of the beetle. There may be some spread but it is not likely that a serious situation will develop without some knowledge of it beforehand.

The infested area on which treating was done by C.C.C. men lies on an eighty to one hundred per cent slope on the south side of Raspberry Draw about three quarters of a mile from its mouth. The timber is scattered and of poor quality in addition to having a hundred per cent infestation of mistletoe in the mature trees.

There are probably about fifteen acres of timber on this side of the draw in scattered patches most of which contained beetle infested trees in the condition mentioned in the first part of this memorandum. The infested trees in the main bodies of timber at the lower end of the stands were treated before conditions became unfavorable for effective work. It is suggested that further work on the area be directed toward a silvicultural cleanup rather than toward the control of an insect which is playing only a minor part in its ecological history.

Beneath openings in the canopy produced by dead trees the reproduction is coming in plentifully but is being infected with mistletoe from surrounding trees so that unless some measures are taken the past history of this area will be repeated indefinitely. The steep rocky terrain, on which patches of timber are necessarily quite irregular, together with the relative inaccessibility of the area make it seem, questionable that the area will ever be of commercial importance. Its importance in the regulation of water flow as well as its value from an esthetic point of view (I understand that the area is frequented by raspberry pickers) at present constitute its principal benefit to the Forest. The area is capable of producing a good grade of poles, props, posts or ties, and it is with the thought of a possible future demand for these or similar products that the suggestion of a silvicultural cleanup of the area has been made. If this is not done there is no practical need of further work.

Other infested areas tributary to the Lake Fork River near the lower end of Moon Lake have more value from a commercial point of view inasmuch as they are more readily accessible and should silvicultural measures be instituted on these areas during the coming spring, there will be several products available, such as props, ties and posts from the timber removed.

In view of the fact that the heavy snows which have fallen will make further work on the infested areas impractical for the remainder of the season. The following data on treatment of the Douglas fir beetle by members of the Civilian Conservation Corps are submitted.

Method of treatment	-	Felled and burned in decks
Crew - man days	-	219
No. trees treated	-	820
Gallons oil used	-	70

Cost:

C.C.C. at \$3.33 per man per day (Includes salaries, expenses, over- head and all equipment)	\$729.27
70 gal. oil @ \$0.14 per gal.	9.80
Forester	<u>74.00</u>
Total cost	\$813.07
Cost per tree99

Lieutenant Stewart assisted me in calculating the total cost per man per day and we are not sure that this figure is correct. It should be regarded as approximate.

Mr. Ralph N. Rowley has located a heavy infestation pine beetle (*D. monticolae*) in the rather extensive limber pine area on the upper north side of Raspberry Draw and estimates two to three hundred infested trees. This timber lies adjacent to a valuable lodgepole pine area which extends back into the Little Meadows country on the Hellum Lake trail. It is important, for this reason, that measures be taken early next spring to eliminate the infestation.

Some experiments were conducted to try to find whether these trees could be treated by the burning-standing method or whether it would be necessary to fall them. It was decided that the smaller trees could be effectively treated standing and that it will be necessary to fell and trim the larger trees most of which have large branches extending almost to the base and which contain heavy broods of the insect. The area can be cleaned up from this camp or possibly from a spike camp should it be decided to do other work in the vicinity of Moon Lake during the coming spring.

The lodgepole pine stands in the vicinity of Little Meadows have been examined and they appear to be practically free from serious infestation of the mountain pine beetle although the usual latent broods are present.

(Sgd.) LOWELL J. FARMER
E.C.W. Forester